

# *Annotation & Nomenclature*

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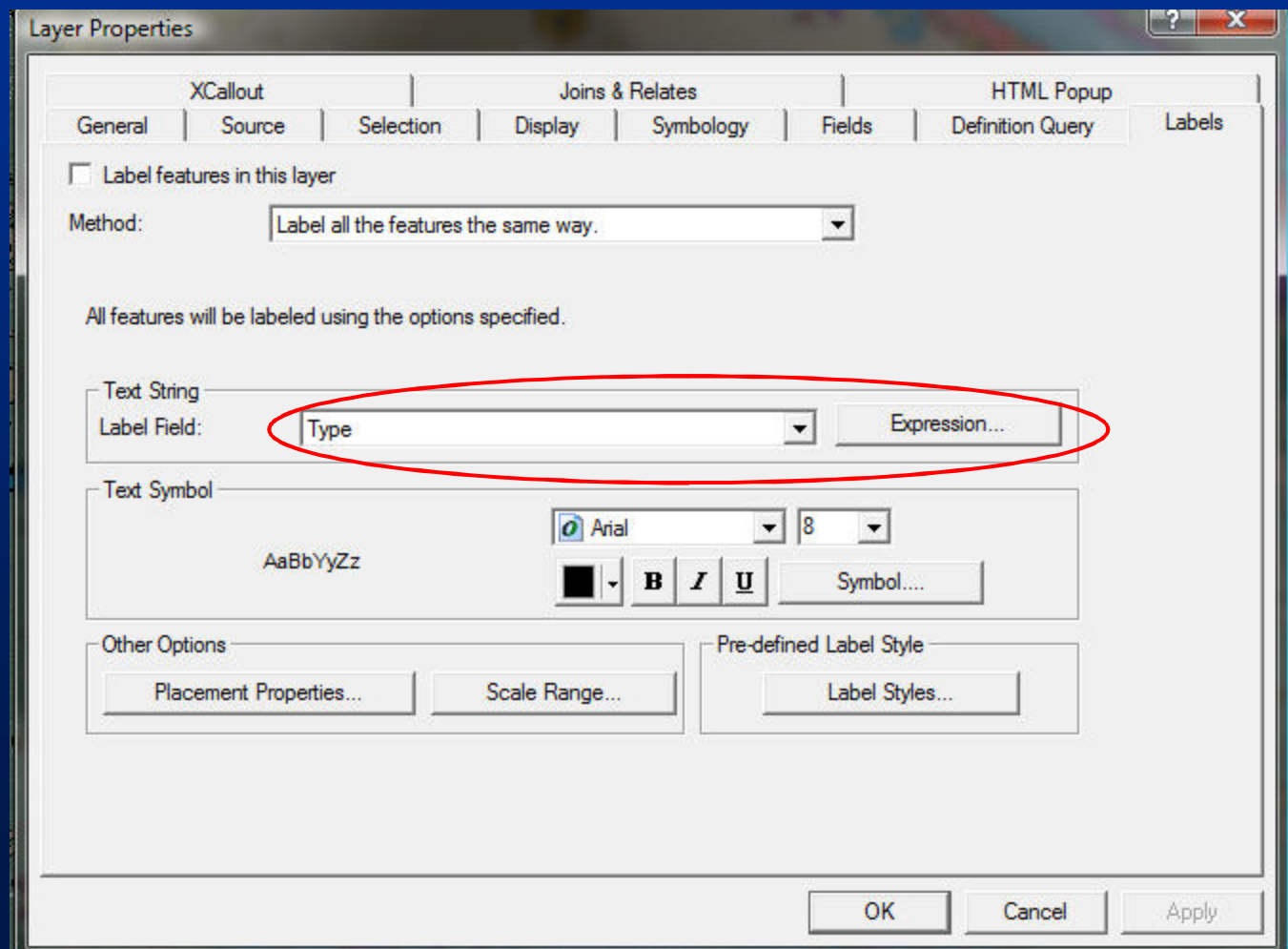
## Annotation

- Annotation is ArcGIS's way to store text
  - Vector properties
  - Font types
  - Text strings with HTML code, i.e. subscript
  - Leaders
- Annotation can be stored as a feature class and be synced to the feature class that it is associated with, e.g. Geology and the Geology\_Annotation feature classes
- Annotation will update based on changes to the original feature class

# Steps To Add Annotation

- Annotation starts from the labels generated in the Layer Properties of the original feature class

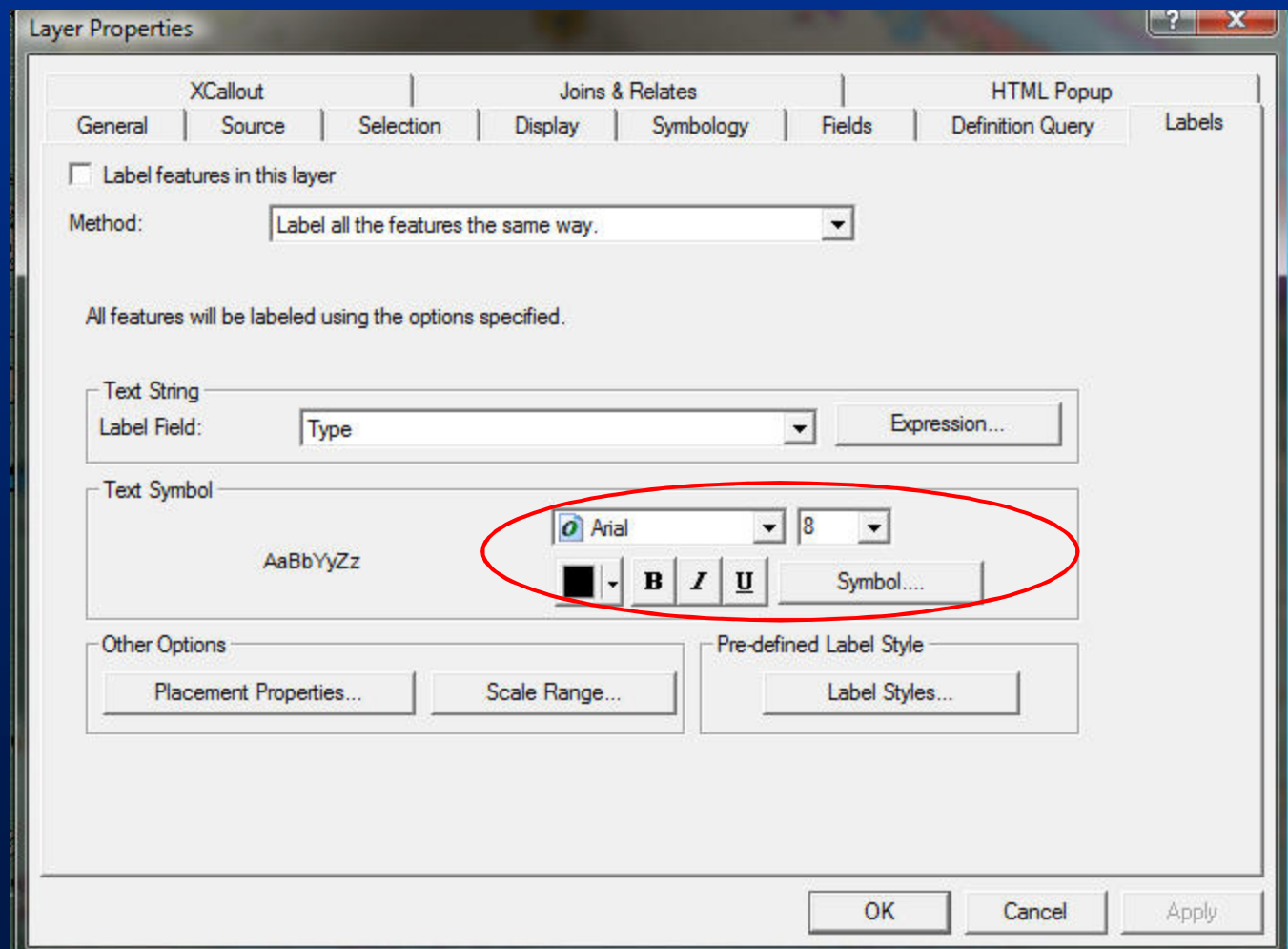
You can use a field in the table or you can customize using an expression



# Steps To Add Annotation 1

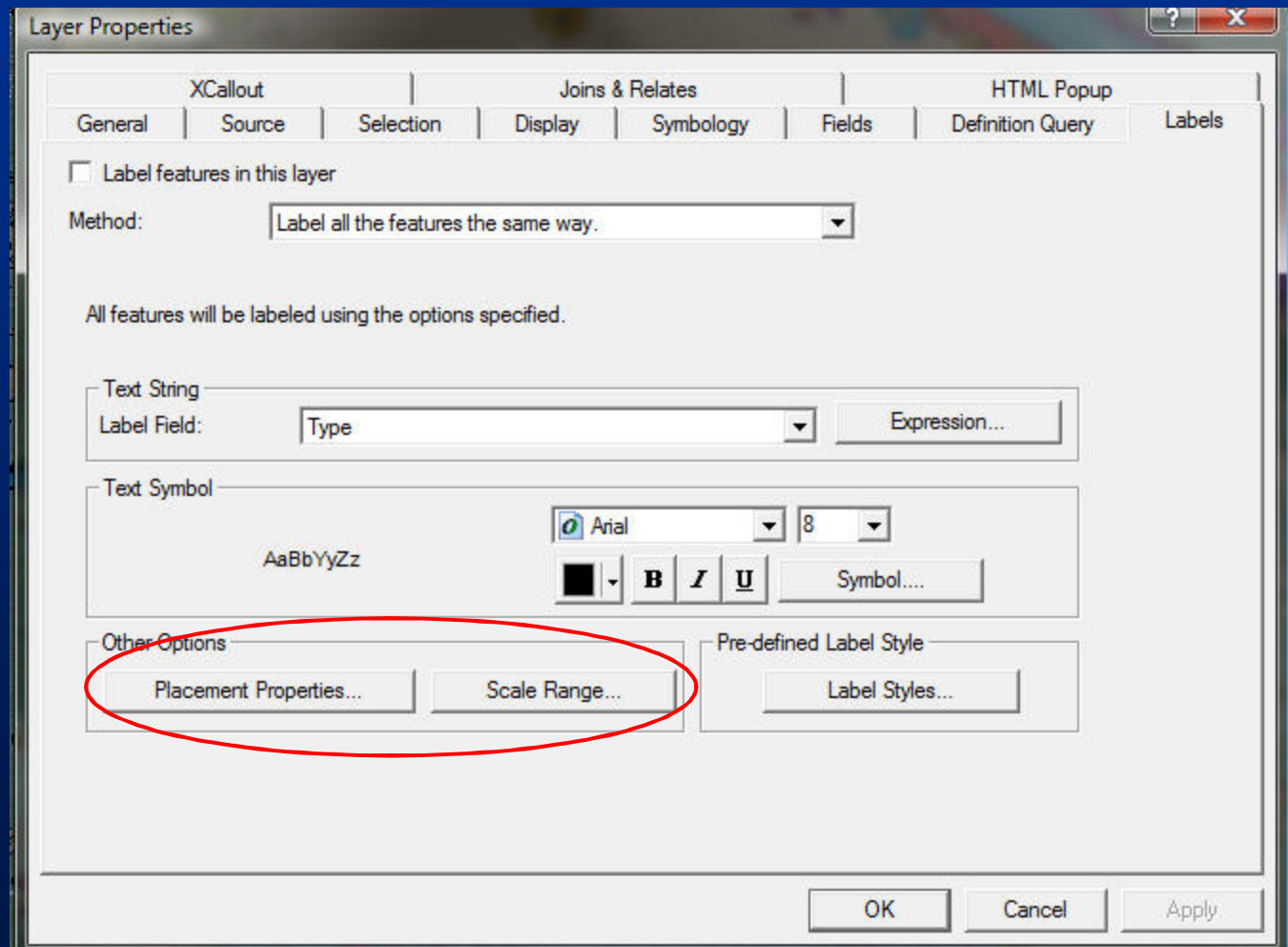
- Annotation starts from the labels generated in the Layer Properties of the original feature class

You can adjust the font, size, or use a predefined symbol



# Steps To Add Annotation 1

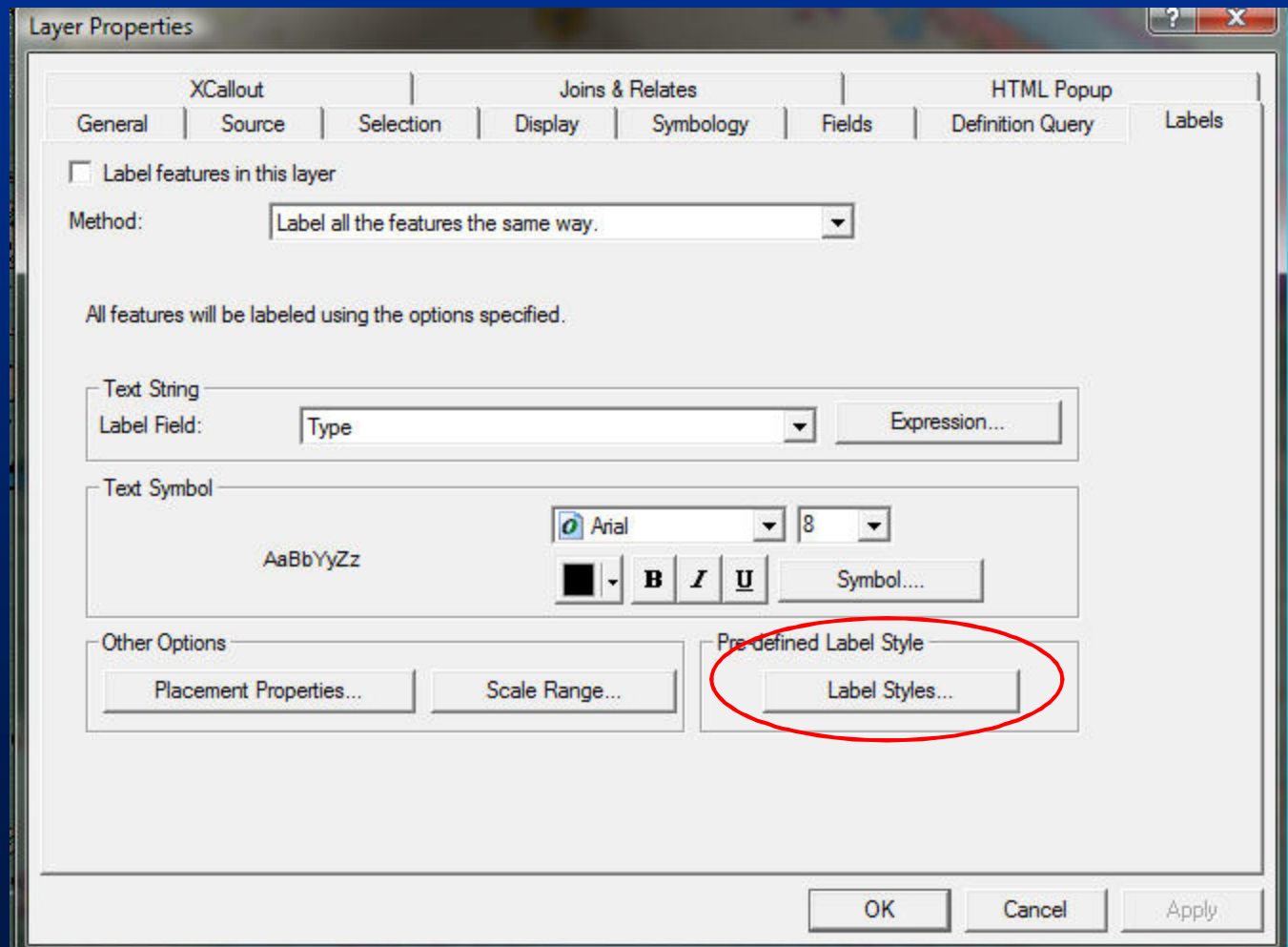
- Annotation starts from the labels generated in the Layer Properties of the original feature class



You can adjust how your labels draw & at what scales the labels are visible

# Steps To Add Annotation 1

- Annotation starts from the labels generated in the Layer Properties of the original feature class

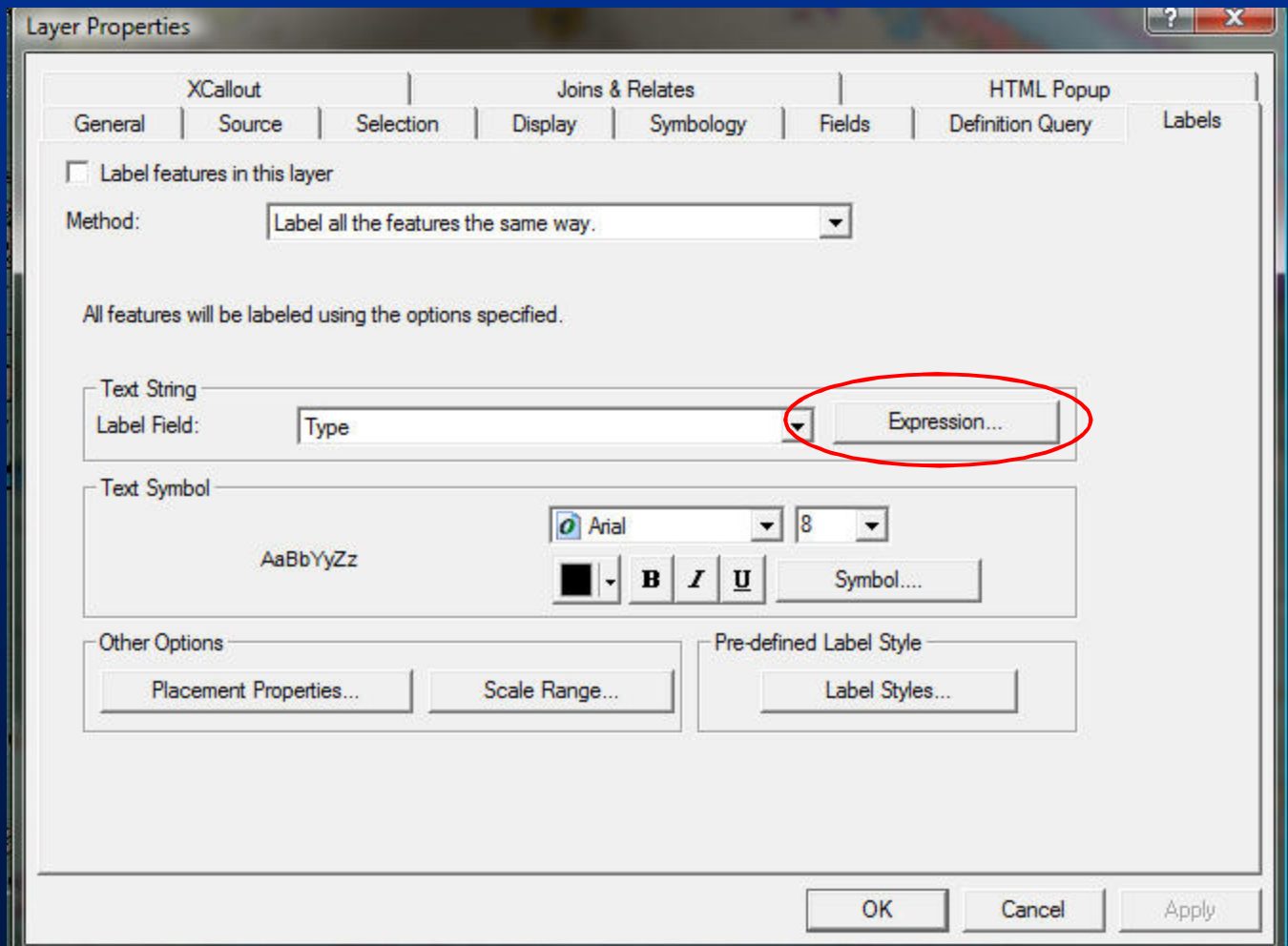


You can use the ESRI label styles, mostly topo or road map styles

# Steps To Add Annotation 1

- Annotation starts from the labels generated in the Layer Properties of the original feature class

Custom expressions are the best way to get exactly what you want out of your anno



# Steps To Add Annotation 2

- Set up your table to reflect what you want out of the labels

Type = Full unit names

Symbol = Full unit symbol

Age = Age Symbol

Province = Province Symbol

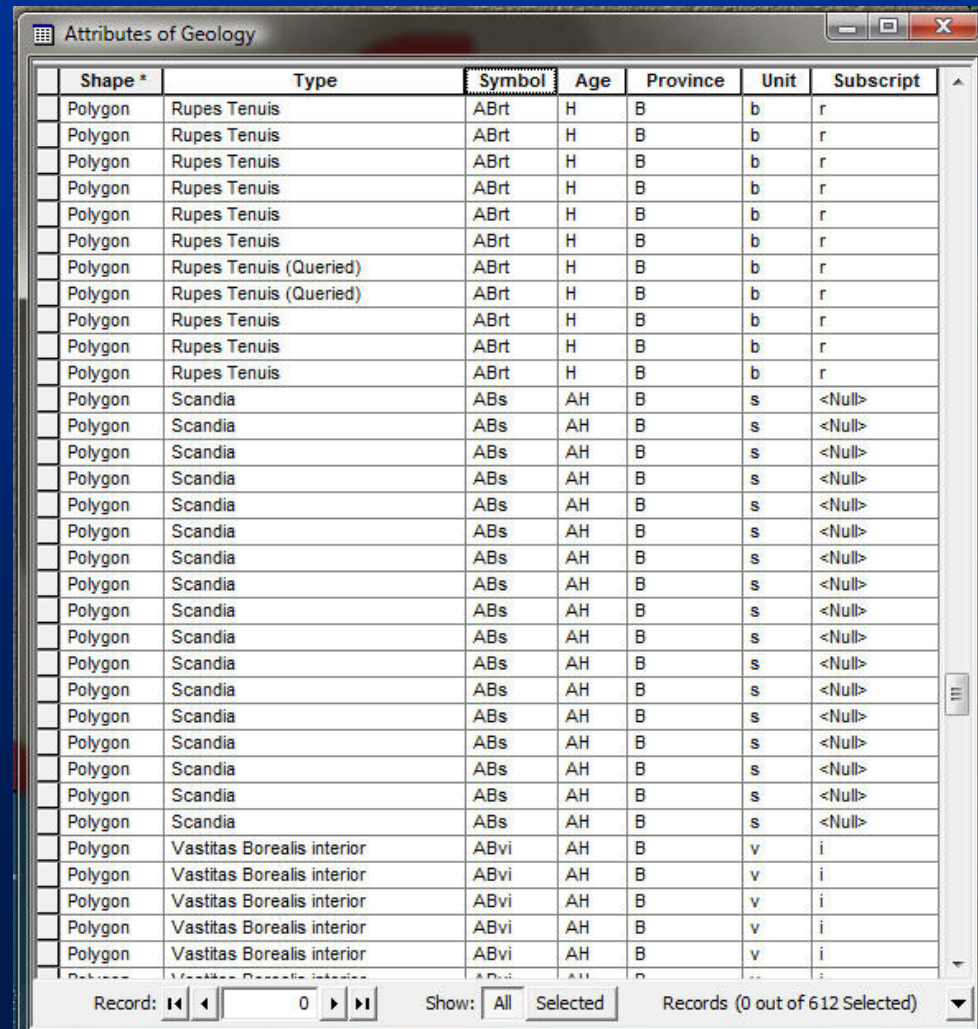
Unit = Unit Symbol

Subscript = Subscript characters

Use separate fields for portions of the symbols if there will be differences in how you want them to be represented

ABvi (no need to separate fields)

ABv<sub>i</sub> (put into separate fields)



Shape *	Type	Symbol	Age	Province	Unit	Subscript
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Rupes Tenuis (Queried)	ABrt	H	B	b	r
Polygon	Rupes Tenuis (Queried)	ABrt	H	B	b	r
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Rupes Tenuis	ABrt	H	B	b	r
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Scandia	ABs	AH	B	s	<Null>
Polygon	Vastitas Borealis interior	ABvi	AH	B	v	i
Polygon	Vastitas Borealis interior	ABvi	AH	B	v	i
Polygon	Vastitas Borealis interior	ABvi	AH	B	v	i
Polygon	Vastitas Borealis interior	ABvi	AH	B	v	i
Polygon	Vastitas Borealis interior	ABvi	AH	B	v	i



## Steps To Add Annotation 3

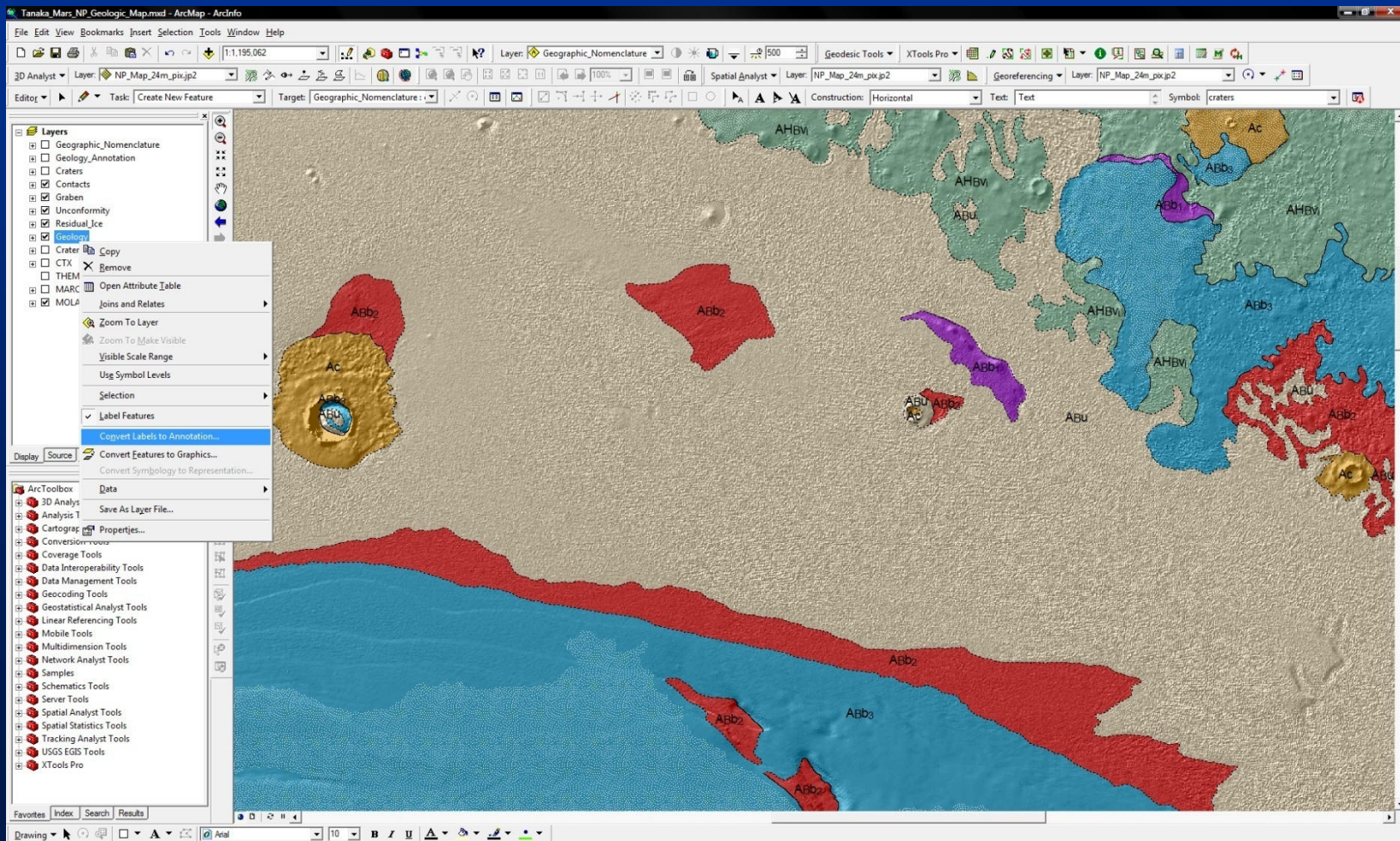
- Write the proper expression to customize your annotation
- Expression components can be found at [http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm?TopicName=About\\_building\\_label\\_expressions](http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm?TopicName=About_building_label_expressions)
- For the table on the previous slide:  
"`<FNT name='Arial' size='8'>`" & [Age] & "`</FNT>`" & "`<FNT name='Arial' size='7'>`" & [Province] & "`</FNT>`" & "`<FNT name='Arial' size='8'>`" & [Unit] & "`</FNT>`" & "`<FNT name='Arial' size='7'><SUB>`" & [Subscript] & "`</SUB></FNT>`"

**OUTPUT:** ABV<sub>i</sub>

Visually inspect your map and your labels to make sure their “look” is correct. Don’t worry about placement within the polygon, you will fix that after converting to annotation. If some polygons don’t have a label, you can go back to placement properties and “Draw overlapping labels” or wait until you convert to annotation because you can copy and paste extra labels

# Steps To Add Annotation 4

- Change labels to an annotation feature class associated with the vector feature class



# Steps To Add Annotation 4

- Change labels to annotation feature class associated with the vector feature class

Store annotation: Always choose “In a database”  
NOT the map

If the Reference Scale is not specified, cancel this dialog box and go to the Table of Contents, right click on Properties and set the reference scale to the scale of your print map

Create Annotation: Choose “All features”

Feature Layer	Feature Linked	Append	Annotation Feature Class
Geology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	GeologyAnno

Destination: Tanaka\_Mars\_NP\_Geologic\_Map.gdb\NP\_Geomap\_2009\GeologyAnno

Convert unplaced labels to unplaced annotation

Convert Cancel

# Steps To Add Annotation 4

- Change labels to annotation feature class associated with the vector feature class

Make sure the Feature Layer is correct

Check Feature Linked

You shouldn't have to worry about append, if it is checked, remove the check

Annotation Feature Class shows the name of the new class

Check the Destination

Feature Layer	Feature Linked	Append	Annotation Feature Class
Geology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	GeologyAnno

Destination: Tanaka\_Mars\_NP\_Geologic\_Map.gdb\NP\_Geomap\_2009\GeologyAnno

Convert unplaced labels to unplaced annotation

Convert Cancel

## Steps To Add Annotation 4

- Change labels to annotation feature class associated with the vector feature class

If there is a check in “Convert unplaced labels to unplaced annotation”, you can go back into the Label tab in the Feature properties and adjust the Placement Properties.

OR

Not worry about it because we can copy and paste annotation

Click on Convert

Feature Layer	Feature Linked	Append	Annotation Feature Class
Geology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	GeologyAnno

Destination: Tanaka\_Mars\_NP\_Geologic\_Map.gdb\NP\_Geomap\_2009\GeologyAnno

Convert unplaced labels to unplaced annotation

Convert Cancel

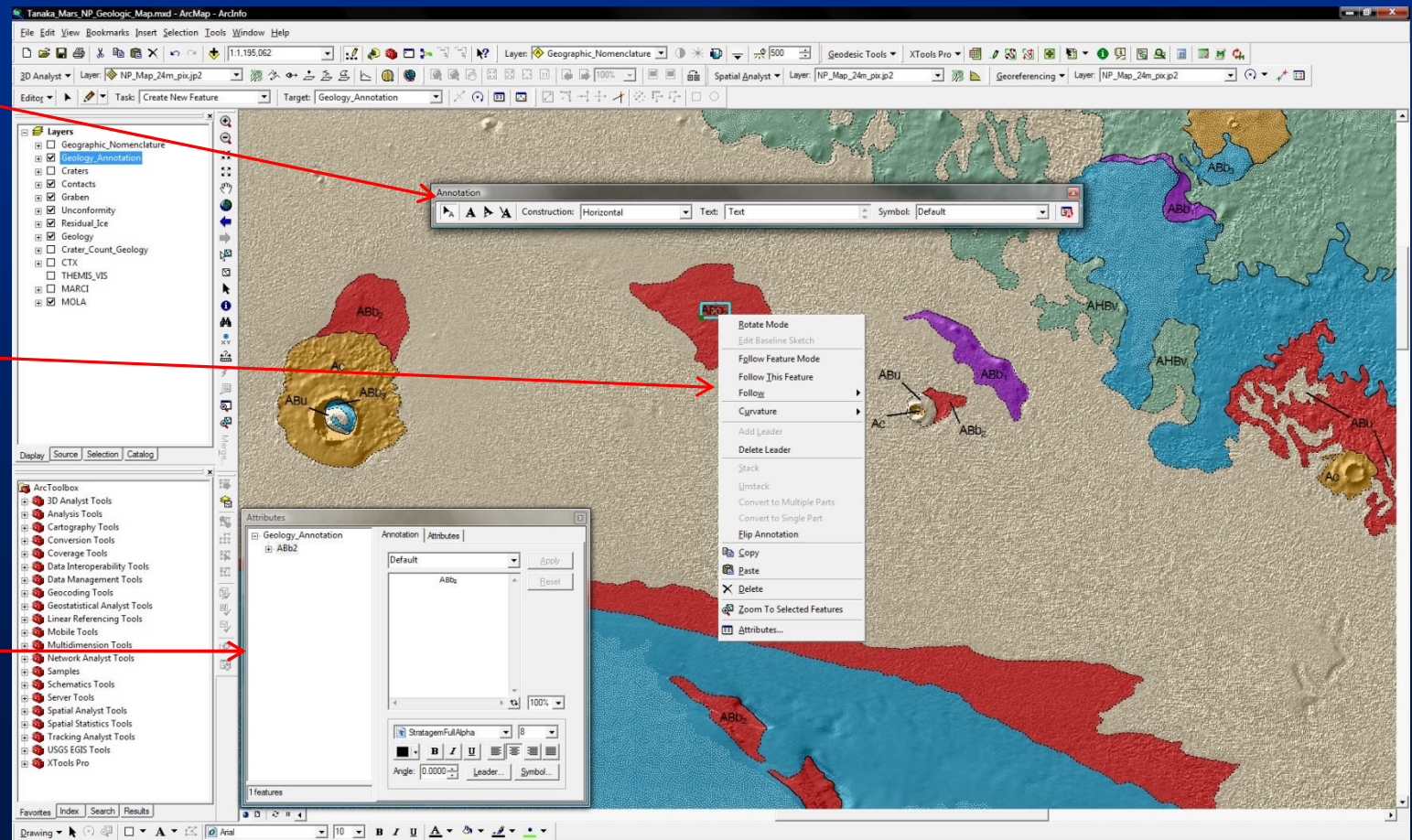
# Manipulating Annotation

- Change location, add leader/multiple leaders, change the appearance using the Annotation Toolbar and/or Annotation Attributes.

Anno Toolbar

Anno right-click

Anno Attributes



# Manipulating Annotation

- Things I typically do:
  - Select all, add a “Simple Line Callout” (Leader) using a 1.00 thick black line to every piece of anno using the Annotation Attributes menu
  - Zoom into a corner of the map and start to move anno to clear locations, and systematically pan through the map
  - Add multiple leaders in locations where the units are too dense for clear placement of multiple unit symbols

# Manipulating Annotation

- Select all, add a “Simple Line Callout” using a 1.00 thick black line to every piece of anno using the Annotation Attributes menu
- Why: Depending on the density of units in your map, there is a potential need for a lot of leaders. Faster to delete them from anno that doesn't need them.
- How:
  1. Right click on the annotation feature class in the Table of Contents, choose 'Selection', Choose 'Select All'
  2. Start editing
  3. Using the Annotation toolbar, use the 'Edit Annotation Tool' (black arrow with an uppercase 'A'), right click on any selected anno, choose 'Attributes' (very bottom)
  4. In the left pane of the new window click on the top word in the box (HINT: it will be the name of the annotation feature class). Make sure it is highlighted
  5. Click on Leader in the bottom right of the Attributes window, a new window will appear
  6. Click on the Type dropdown menu in the right side Properties pane and choose 'Simple Line Callout'
  7. Click the 'Symbol' button and change the color to black
  8. Click 'OK', Click 'OK', Click 'Apply'



# Manipulating Annotation

- **Alternatively**

- If you don't think you will need a lot of leaders then you can add leaders manually:

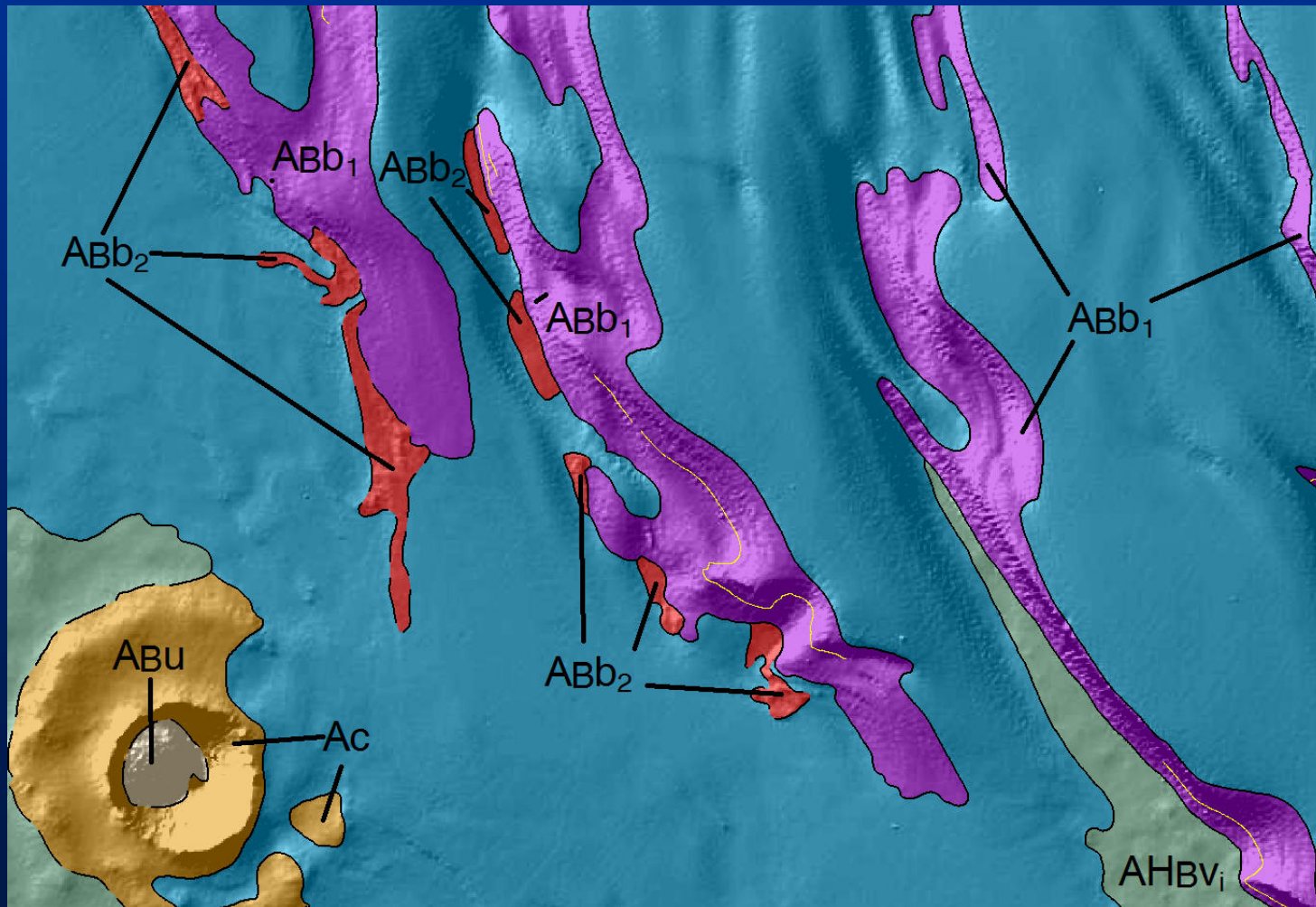
- Select the anno
    - Right click using the Edit Annotation Tool
    - Choose 'Add Leader'
    - Follow steps 5 – 8 from the slide above to customize the look of the leader

# Manipulating Annotation

- Zoom into a corner of the map and start to move anno to locations where they are clear, and systematically pan through the map to make sure all anno is placed and that all features are annotated. Turn on all of the features and other layers of annotation to detect conflicts
- The labeling rules from FGDC Carto Standards (pp.27-29)
  - “For a map to be easily read, labels and leaders should be placed where they are clear and legible, taking care to avoid overprinting of linework, symbols, or other labels” –FGDC (2006)
  - All feature labels should be horizontal
  - Leaders are straight lines, should cross the contact at as high an angle as possible, should extend into the unit, should not cross through multiple units unless absolutely necessary
  - Multiple leaders from a single label should not be joined at their label ends.

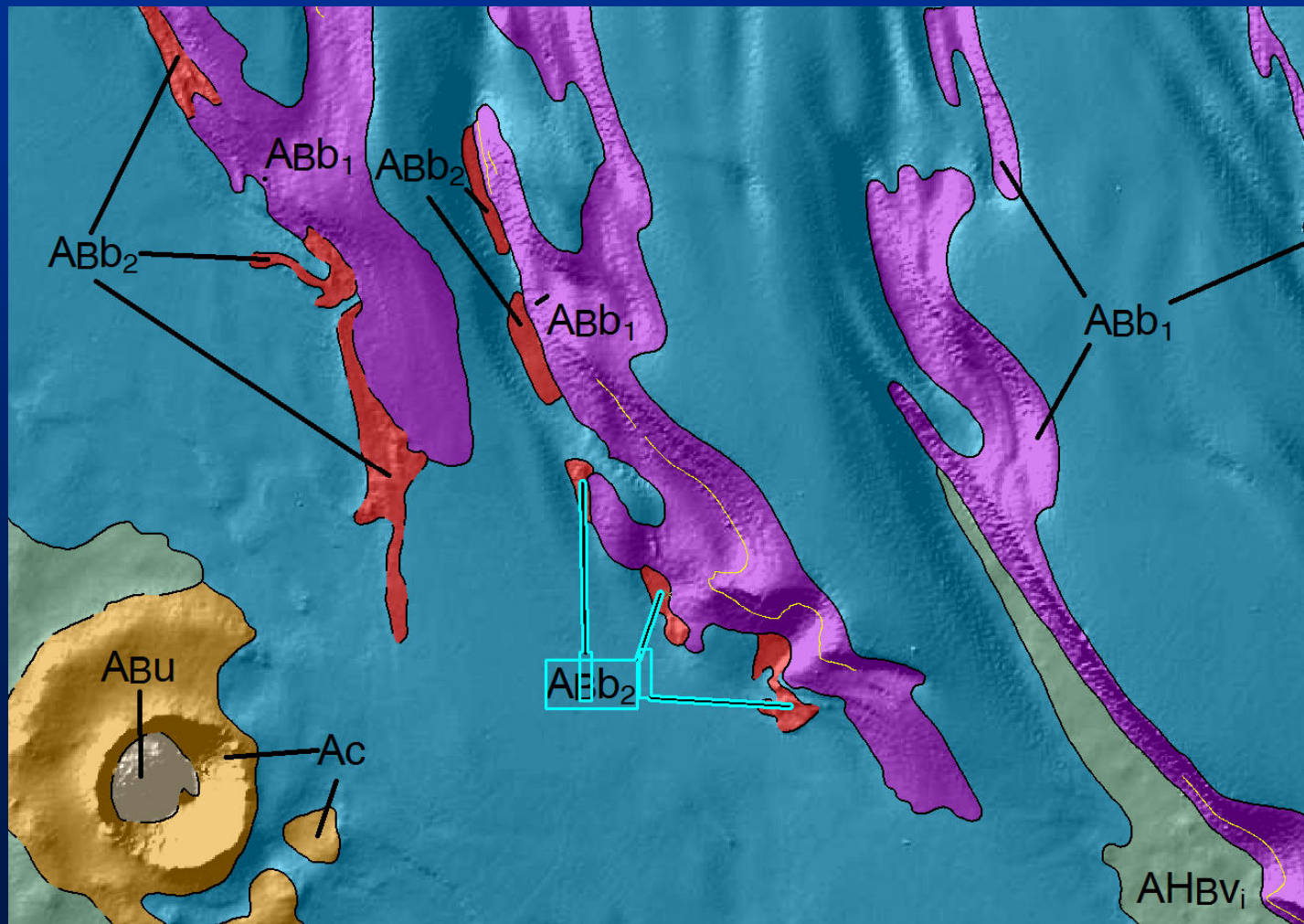
# Manipulating Annotation

- Add multiple leaders in locations where the units are too dense or for clear placement of multiple unit symbols



# Manipulating Annotation

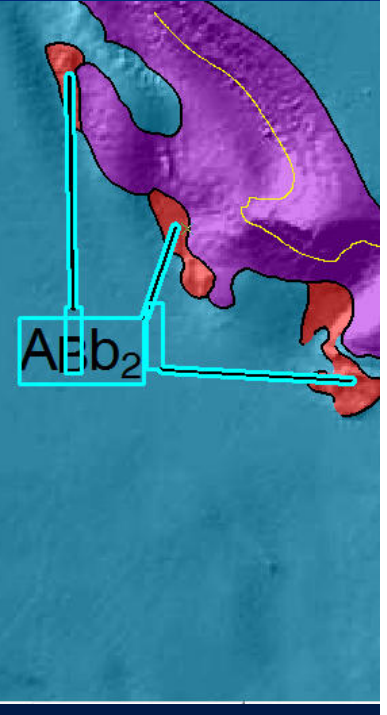
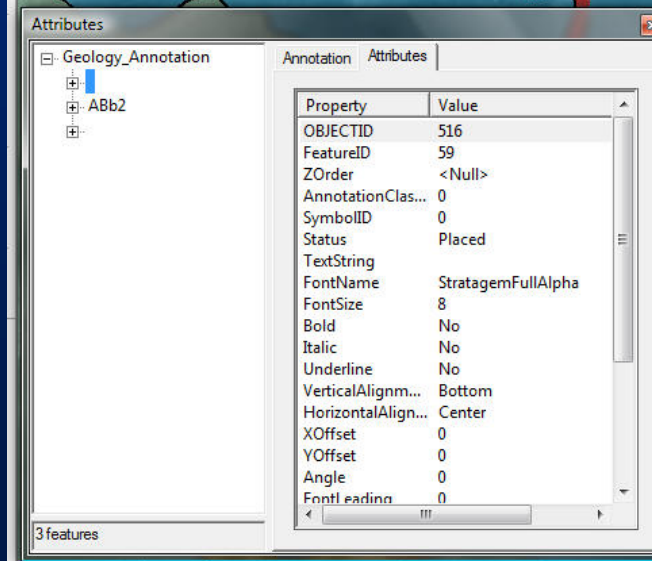
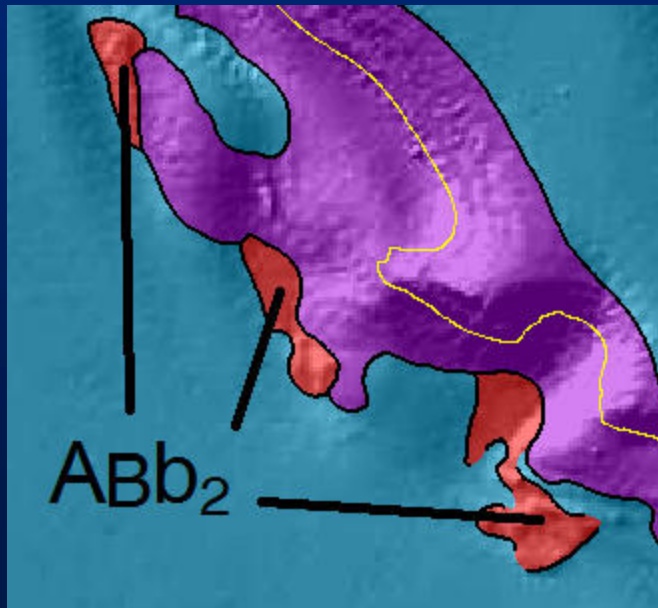
- In ArcGIS, you cannot add more than one leader per label. But there is a work around



# Manipulating Annotation

## ■ Adding Multiple Leaders

- Select and position the one of the labels (this one will include the unit symbol)
- Select another label, right click, choose 'Attributes'
- Click the "Attributes" tab in the 'Attributes' window
- Click on the text string, delete the contents, add a single space
  - Arc does not allow for a blank text string and you will get an error message if you don't include the space
- Move the blank annotation with the leader so that it is pointing from the annotation that displays the unit symbol
- Repeat as necessary



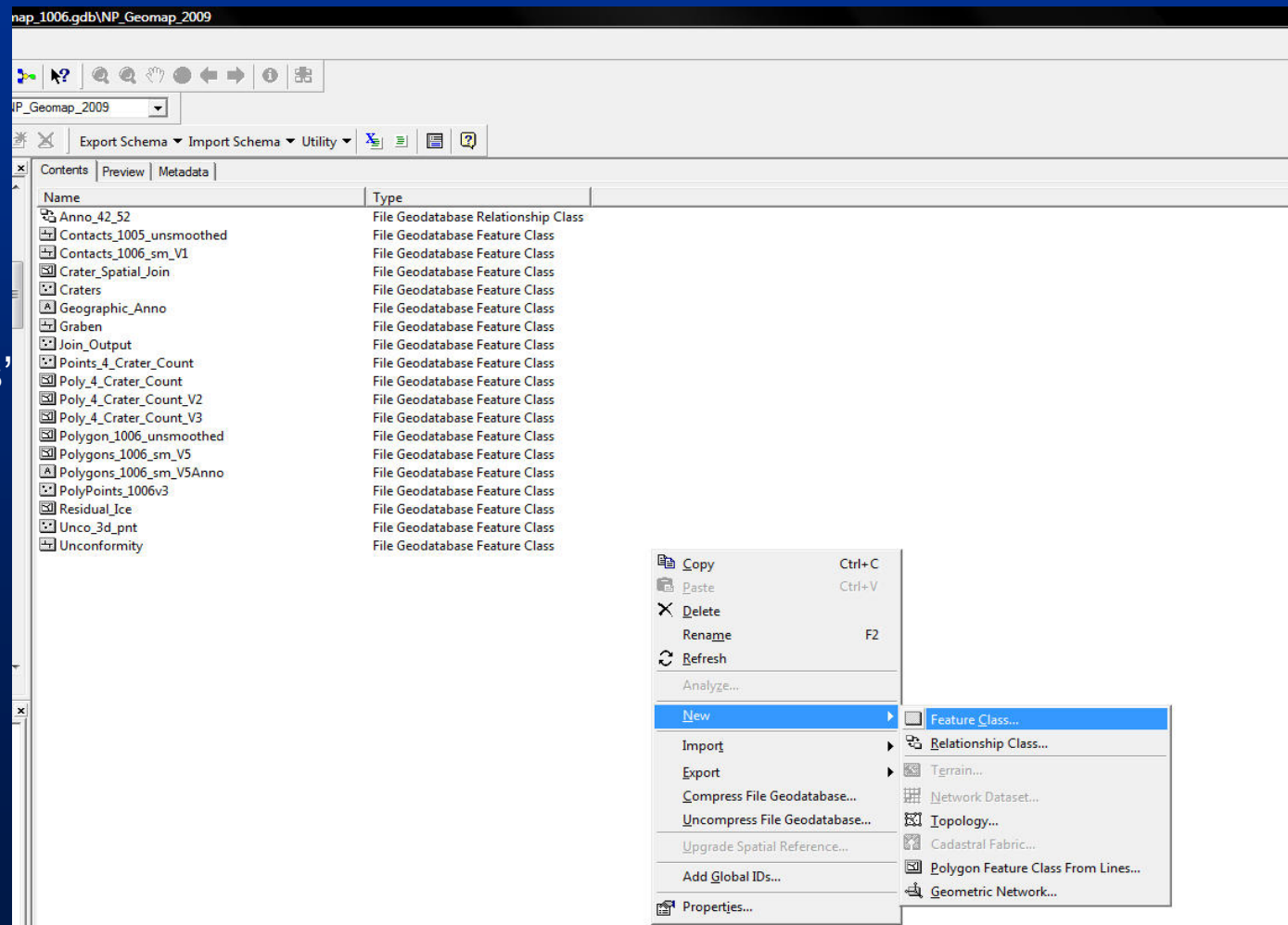
# Adding Nomenclature

- Adding the nomenclature to your map area is good for:
  - Review map copies
  - Helping control the final layout of your map
- Because there are no features for the annotation to be tied to, you have to create a new annotation feature class
  - Before you do this, it is helpful to know what nomenclature types are included in your area. GIS nomenclature shapefiles now available at:
    - <http://planetarynames.wr.usgs.gov/>
  - Font styles are different for certain types of nomenclature and are size dependent you may want to set up different symbols for each category
    - This is not required as each anno label can be thoroughly manipulated through the attributes pop-up window
    - We are working on a document that lists standardized fonts and styles based on map scale and feature size

# Creating an Annotation Feature Class

- Open ArcCatalog
- Navigate to the FILE geodatabase where you want to save

Right click  
Choose 'New'  
and 'Feature Class'



# Creating an Annotation Feature Class

- Name the new feature class and select Annotation Features as the type. You do not want to link these to an existing feature class
- Click Next

New Feature Class

Name:

Alias:

Type

Type of features stored in this feature class:

Link the annotation to the following feature class

Geometry Properties

Coordinates include M values. Used to store route data.

Coordinates include Z values. Used to store 3D data.

< Back   Next >   Cancel



# Creating an Annotation Feature Class

- Set the Reference Scale to the same scale as the printed map
- You can ignore the editing behavior check box
- Click Next

New Feature Class

Reference Scale

Specify the reference scale for the annotation.

If you zoom in to a larger scale than the reference scale, the annotation will appear larger, and if you zoom out to a smaller scale the annotation will appear smaller.

Reference Scale: 1:2,000,000

Map Units: Meters

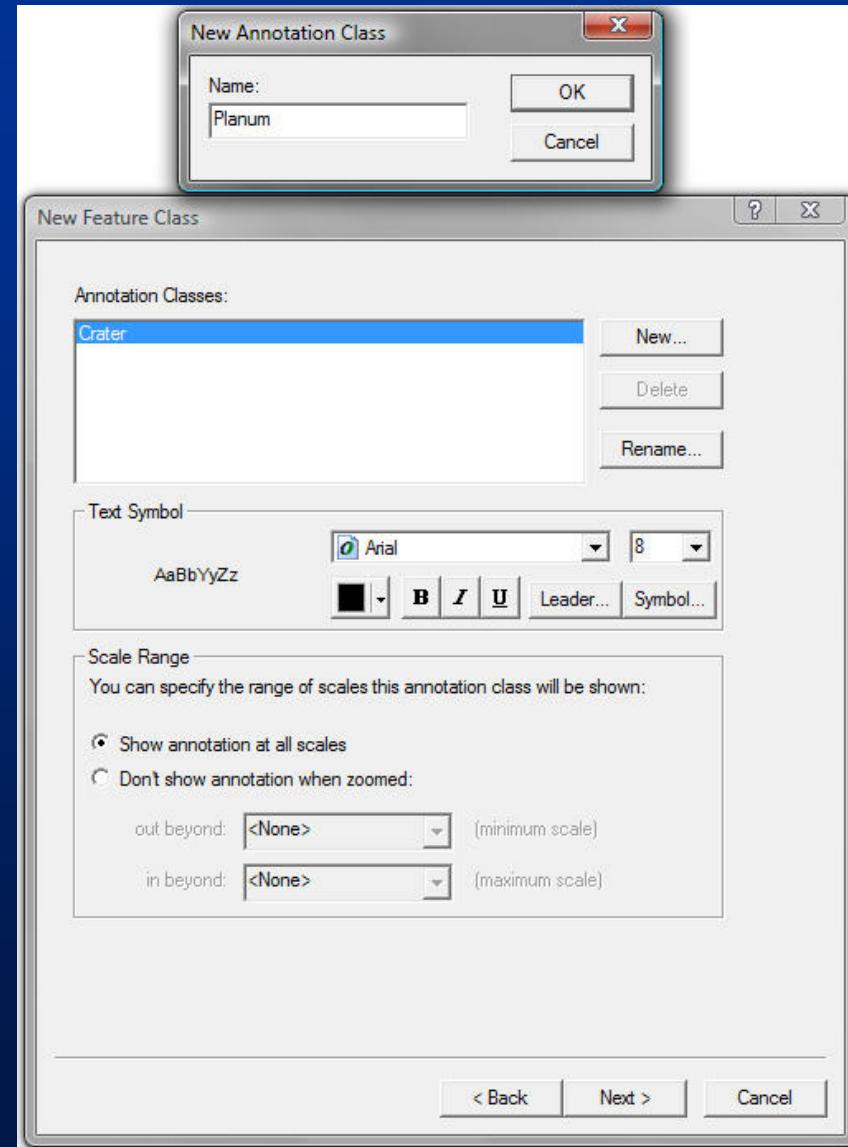
Editing Behavior

Require symbol to be selected from the symbol table

< Back   Next >   Cancel

# Creating an Annotation Feature Class

- This is where, if you want, you can set up different annotation classes
- Choose “New”, and name the class
- Select the Text Symbol that is appropriate for this class
- When done click next
- If you don’t want to create different annotation classes click Next
- Click Next and then Finish



# Adding Annotation

- Add the new annotation feature class to your project in ArcMap
- Start Editing and add annotation using:
  - Horizontal – Top is always up
  - Straight – Not horizontal, at an angle
  - Curved – Curved text
  - Follow Feature – Not as useful as it sounds
- All of these are drawn using the Annotation toolbar tool set and the Edit menu draw tool (pencil)

